THE CRUCIFIXION CALENDAR

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THE criticism by Dr. R. A. Parker with reference to the lunar argument published in the December number of *JBL* (1942) is a contribution inviting consideration from those who are interested in biblical chronology. With regard to the computation of OT and NT dates, scholarship has commonly employed only a "rough rule," and hitherto little progress has been made in producing a Jewish calendar table that both harmonizes with the motion of sun and moon, and at the same time is in agreement with the ancient historical synchronisms, of which the Bible has even a larger number than the Babylonian and Assyrian monuments.

About the turn of the present century, simultaneous study of the problem was renewed in various universities and other centers of research. Inscriptional chronology was perhaps the moving impulse that promoted investigation on the part of universities and museums, while the leading observatories, which constantly receive inquiries concerning the crucifixion date, have been necessarily interested in the Jewish phase of this calendarial argument. Standard almanac computers know that the modern rabbinical institutions are not the exact counterpart of the ancient Jewish feast dates. It is further admitted by Jewish writers that their forefathers — in the words of Piniles — "die 34 Jahre nach dem Nicäer Concil den Kalender geregelt, darauf Bedacht genommen, dass kein Fremder und Unbefugter in seine Principien eingeweiht werde."[1]

This procedure has been in direct contrast to that of the Babylonians, who have left their chronological imprints on tablet and stone. It has not been difficult therefore for Christian

[1] Adolf Schwarz, *Der Jüdische Kalender*, Breslau, 1872, 42.

scholarship to postulate that the Jews, upon the return from Babylon, continued to use the same calendar as they adopted during captivity. And especially has this assumption had appeal because Judaism, from the time of Ezra and Nehemiah, has retained the Babylonian names of the months. But in addition, a second hypothesis now claims, inasmuch as the Schoch tables[2] appear to satisfy the Babylonian observations of the moon, that by these same tables the biblical dates can be computed. From the time of Ezra, Jewish chronologers have challenged this first assumption,[3] and this short study again calls in question the second. The principal features of Dr. Parker's criticism we shall discuss in the same order as submitted.

1. *The Application of Schoch's Tables to Biblical Dates.*

The following statement testifies to the degree of accuracy of Schoch's *Neulicht* dates for the meridian of Babylon:

> "Schoch claimed for his Table M an accuracy of about 75 per cent (*op. cit.*, p. 101) in the dating of the beginnings of months, but was less certain as to the identification of the months themselves. This figure is not borne out; for, after adjusting his Table M in accordance with the intercalations given in our Plate I, we find his dates for the beginnings of years to be but 61.5 per cent accurate."[4]

The foregoing degree of accuracy was ultimately raised to 70 per cent by careful checking and calculation, that is, for the meridian of Babylon; but for the meridian of Jerusalem, the percentage is said to be a little lower. The conclusion is then drawn that for historical purposes this uncertainty is not important, even though 30 per cent of the dates may be off by one day! It is this latter hurdle that makes these tables of so little value for the meridian of Jerusalem. For thereby it would not only be impossible to tie a particular event on a definite Julian date to celestial motion, thus identifying the corresponding year, but the same handicap would also make impossible the solution of

[2] Richard A. Parker and Waldo H. Dubberstein, *Babylonian Chronology* (*Studies No. 24*, Oriental Institute, University of Chicago), 1942.

[3] Schwarz, *loc. cit.*, 15. According to Ezra 3 2–5 and Neh 10 29–33, the returning Jews consecrated the Mosaic new moons, not the Babylonian.

[4] *Babylonian Chronology*, p. 23.

any ancient synchronism that equates a Jewish date with a certain day of the week. Of this kind are many of the biblical date constructions, whose synchronisms hold an indispensable relation to the chronological outline of the Bible, and whose importance is unquestionable.

As regards the season of the year and the time of the festivals, the Jewish form of date is even more revealing than its Julian substitute; but, by means of the latter, the positions of the heavenly bodies can be brought into telling relation with the biblical text. Hence the futility of calendarial tables with equivocal Julian dates whose most obvious function is to tie up the chronological outline of some period of consequence.

It is not Schoch's mathematics which have thrust doubt into the validity of his *Neulicht* dates. P. V. Neugebauer acknowledges the accuracy of his calculations, but at the same time states that Schoch's exactness does not relieve an uncertainty that exists with respect to the arc of vision. These are Neugebauer's words with reference to Schoch's new values which he had corrected for refraction: "Die Resultate werden damit rechnerisch genauer; es ist jedoch zu beachten, dass die immer noch bestehende Unsicherheit im Sehungsbogen erheblich grösser ist als die Ungenauigkeit der Werte in Tafel 28."[5]

Both Fotheringham and Neugebauer protested at first against the lunar theory of Schoch; but ultimately his tables were accepted because "his astronomical formula appeared to agree with the attested Babylonian dates." But why not? Schoch deduced his empirical rule from about 400 observations of the moon in the Neo-Babylonian period plus about 100 personal observations of the moon and planets.[6] His rule necessarily would exactly conform to the kind of *Neulicht* he selected. The application of his formula precisely shows that in general he chose the youngest moons possible — those in which the *Neulicht* appeared within one day, or at the most two days — never three — after conjunction. In other words, Schoch's limits for

[5] P. V. Neugebauer, *Hilfstafeln zur Berechnung von Himmels-Erscheinungen*, Leipzig, 1925. Anhang, 1.

[6] S. Langdon and J. K. Fotheringham, *The Venus Tablets of Ammizaduga*, p. 95. London, 1928.

the *arcus visionis* are invariably minimum values. This his table definitely illustrates: its extremes are only 17 to 23 hours, as Parker states.

On the contrary astronomers, from Aratus to Fotheringham, who have left records of the moon's visibility, are in agreement that the moon takes from one to three days — and over — after conjunction, to appear.[7] Hevelius, who observed the moon in northern latitudes around Danzig, even stresses the fourth day.[8] And observers further state that the Nisan moon's early or late appearance largely depends upon her distance from the earth. There are many instances on record that confirm these facts.

There is, however, an outstanding theory that disagrees with this lunar postulate — that of Maimonides. He says — I give Mahler's German translation: "Der Mond wird verdunkelt in jedem Monate, und wird nahezu 2 Tage nicht gesehen, ungefähr 1 Tag vor der Conjunction und ungefähr 1 Tag nach der Conjuction."[9]

Maimonides found a supposed proof for his theory in the ancient astronomy of the Greeks,[10] who in turn had studied in the Chaldaean schools. And so Sidersky is probably correct in stating that the new moon limits of Maimonides agree with those of the Chaldaean priests, who wished to determine in advance the neomenies.[11] Fotheringham computed the angle of vision of Maimonides' tables, and found it to occur on the average about twenty minutes after sunset.[12] But on this basis the lunar theory of Maimonides breaks down, for the new moon must set about an hour after the sun in order to be seen at all. This fact is easily deduced from any standard almanac. Hence

[7] A few instances cited in *JBL*, December, 1942, 259–264.

[8] Johannes Hevelius, *Selenographia*, Gedani, 1647, 274.

[9] Maimonides, *Kiddusch Hachodesch*, tr. into German by Mahler, p. 2. Wien, 1889.

[10] Karl von Littrow, "Zur Kenntnis der kleinsten sichtbaren Mondphasen" (*Sitzungberichte der kaiserlichen Akademie der Wissenschaften*, Wien, 1872, p. 480).

[11] D. Sidersky, "Le Calcul Chaldéen des Néoménies" (*Revue d'Assyriologie* 16 [1919] 25, 28).

[12] J. K. Fotheringham, "Astronomical Evidence for the Date of the Crucifixion" (*Journal of Theological Studies* 12 [1910] 121).

not only are the tables of Maimonides based upon too low a limit for the arc of vision, but so also are the visibility limits of Fotheringham and Schoch, who ultimately built on the same theory.[13]

As further evidence that Schoch's values for the *arcus visionis* are altogether too low, the following instances are taken from his tables, in *Babylonian Chronology*, years 16 to 45 A. D.:

Instances of Too Short Translation Periods in Schoch's Tables
(Computed to a 6:00 p. m. sunset, Jerusalem Civ. Time)

A. D.	Date	Tr.P° (Day)	Wax. P°° (Days)	A. D.	Date	Tr. P. (Day)	Wax. P. (Days)	A. D.	Date	Tr. P. (Day)	Wax. P. (Days)
17	I 18	.81	13.98	27	IV 26	.51*	14.07	37	III 7	.83	14.30
	II 16	.27*	14.03	28	III 16	.65*	14.13		V 5	.66*	13.91
	III 18	.82	14.21		V 14	.59*	13.91	38	II 24	.83	14.97
18	I 7	.75*	14.32	29	VI 2	.76*	13.93	39	V 13	.78	14.56
	III 7	.33*	13.94	33	IV 19	.85	15.39	42	IV 10	.88	15.28
19	V 24	.54*	13.99	35	I 29	.46*	13.97	43	III 31	.52*	14.30
20	VI 11	.68*	13.91		V 27	.86	14.82	44	I 20	.61*	14.03
25	III 19	.51*	14.67	36	II 17	.60*	14.07		III 19	.51*	14.04
27	II 26	.46*	13.99	37	II 5	.56*	14.66		V 17	.84	.4.61

° Translation Period °° Waxing Period

Comments.— The foregoing table represents the extremely short translation periods found on the last page of *Babylonian Chronology.* With those marked by an asterisk, the *Neulicht* occurs on the very day itself of conjunction — an astronomical event which is commonly impossible. This fact was well known to the ancients, as pointed out by Pliny,[14] and also by Scaliger, Bucherius, and others.[15] It is easy to see that the new moon could not be visible when only 6 to 11 hours ($0.^{d}27$ to $0.^{d}46$) east of the sun. But when the moon is far from the earth, and for that reason in slow motion, it is equally impossible that the earth's satellite can be seen within two days after conjunction, and hence the *Neulicht* is carried to the third day.[16] This condition Schoch's lunar theory fails to meet.

As early as the sixth century B. C., the Babylonians are said to have recognized the moon's anomaly.[17] Therefore their lunar observations should periodically show longer translation periods than Schoch's calculations allow. If, however, the conjunction

[13] For ascertaining the *Neulicht,* Fotheringham first followed the rules of Hevelius (JBL 61 [1942] 266), but 25 years later, changed to the theory of Maimonides. He and Schoch both were interested in a world calendar.

[14] Pliny, *Natural History,* I, tr. Bostock and Riley, p. 49. London, 1855.

[15] Bucherius, *De Doctrina Temporum,* p. 372. Antverpiae, 1634.

[16] The 1st of Nisan in the 6th of Darius I, 516 B. C. is an example of a third day *Neulicht,* Jewish reckoning (Ezra 6 15).

[17] *Venus Tablets of Ammizaduga,* p. 45, 1928.

date had been tabled with each *Neulicht*, the series would have increased in value; for thereby each date would be subject to constant checking, and the most important dates would ultimately receive correction, an extremity which Shoch himself concedes:

"If in any particular year Nisan is known to have begun earlier or later than the date given in these tables, the whole calendar should be shifted by one or two months so as to bring it into the correct position, regard being had to the intercalation of a second Ulul where that is known to have taken place."[18]

While this method of correction is not dependable, yet it is a significant witness to the uncertainty of his dates.

2. *A "Percentage Rule" for the Neulicht.*

There never has been anything simpler than trigonometric functions by which to compute the moon's exact place in her orbit. However, the simple relationship between the translation and waxing periods, as described in the *JBL* article, has been understood for centuries. Similar analogies have been made by Pliny, Maimonides and his interpreters, Reinhold, and Kepler. The age of the crescent is to be known by its size;[19] the broader the crescent, the greater the *elongation*;[20] and from Maimonides the following:

"Atque ex his, qui de luna nascente renunciarent, tentandae fidei causa, quaerebatur etiam & illud, luna quam altè ferebatur. Id cognoscitur ex *arcu visionis*, qui si brevior est, cursus lunae propiùs à terra volvi, si longior, luna moveri videtur altiùs. Ut enim *visionis* arcus longus est, ita lunam oculi altam à terra percipiunt."[21]

In other words, when the moon is near the earth, the arc of vision is short, and when the moon is far from the earth, the arc of vision is long. In ancient Israel, the astronomers could

[18] *Ibid.*, 100.

[19] Johannes Kepler, *Gesammelte Werke*, Band II, Astronomiae Pars Optica, p. 207. München, 1939.

[20] E. Baneth, "Maimuni's Neumondberechnung," Teil III, *Zwanzigster Bericht über die Lehranstalt für die Wissenschaft des Judenthums in Berlin*, 1902, 118.

[21] R. Mosis Majemonidae, *Sacrificiis Liber*, tr. de Compiegne de Veil, p. 424. Londini, 1683.

evaluate this lunar distance by the eastern movement of the moon among the stars, and her height above the horizon. We can get the same information by comparing the arc of vision, or its time equivalent, the translation period, with the waxing period of the moon. For the waxing period is also long or short according as the moon, in this part of her orbit, passes through perigee or apogee. Similarly, therefore, the arc of vision has an approximate relation to the length of the waxing period — when the one is long or short, so also is the other. That is simple; but the relation is merely an approach to the length of the arc, as it was represented to be in my study.

3. *"Nowhere in Jewish law is there set forth any statement of a necessary relationship between the feast of the passover and the full moon."*

Dr. Feigin is cited as authority for the foregoing assertion. If by *Jewish law* the Talmudic teaching is referred to, then he is quite right, for nowhere, it appears, in the tractates of the Talmud is even the current calendar of Hillel II found under discussion.[22] Nevertheless, the relation of the rabbinical passover to the full moon is definitely set forth by modern Jewish chronologers as, for example, by Sidersky as follows:

> "Nous savons, en effet, que de soir de la pâque juive doit coïncider avec la pleine lune (d'après des textes cités plus haut de Josèphe et de Philon), et ne pouvait en aucun cas précéder ce phénomène physique. Il peut arriver quelquefois que, par suite de certaines circonstances la néoménie soit fixée au surlendemain de la conjonction et que la pâque soit célébrée 24 heures après la pleine lune, mais le contraire est impossible."[23]

In the Pentateuchal law, too, the case was similar, for a very precise relation necessarily existed between a *fixed* passover date on a *fixed* meridian and both new and full moon. The nations of the Near East have left significant records of the date when the Nisan moon fulled in Mediterranean countries. With the Romans, whose earliest calendar was lunar, the *ides* marked

[22] Schwarz, *loc. cit.*, 37, 38.

[23] D. Sidersky, "Etude sur l'origine astronomique de la chronologie juive," *Mémoires présentées par divers savants à l'Academie des Inscriptions et belles-lettres de l'Institut de France.* Vol. XII, part 2, 1913, 636. Paris.

the day of full moon.[24] This obviously occurred on the 13th in the time of corn harvest, for ultimately this same date became an ideograph in the Julian calendar, in whose paschal month April the *ides* were always commemorated on the celebrated "13th."[25] Similarly, in the earliest calendar of Egypt, which also was lunar, the full moon was feasted on the 13th day, and the feast was called "Feier des leuchtenden Aufgangs."[26] That this date was patterned after the spring month is indicated by the feast of the 14th, which was named "Feier der Majestät des Widders."[27]

The Arabs too, though their months were wandering through all the seasons, still had distinguishing names for certain nights of the month, and called the night following the 13th day *badr*, because in it the moon is full and her light complete.[28] So also the Babylonians had rules for the days of Nisan. On the 13th, "Sin bears a full crown!"[29] In Babylonia no month commonly had the same number of days from year to year, but always on the important *13th* of Nisan, an offering was made to Sin with his full crown of light. Such was astronomical law in the countries bordering on Jerusalem.

Consequently the fixed Pentateuchal Passover date on 14. Nisan obviously occurred on the day *after* the Jewish date of full moon, and certainly not *before*! According to this interpretation the frequently cited commentary of the Jewish philosopher Aristobulus has been understood. He dedicated his exposition of the Pentateuch to Ptolemy Philometor,[30] and his precepts regarding the ancient Passover were taught by his disciples —

[24] Martin P. Nilsson, *Primitive Time-Reckoning*, p. 167. London, 1920. "Nonnullis placet, Idus dictas vocabulo Graeco, a specie, quae apud illos vocatur, quod ea die plenam speciem luna demonstret" (Venerabilis Bedae, *Opera Omnia*, ed. Giles, Vol VI, p. 176. Londini, 1843.

[25] Cf. Webster.

[26] Heinrich Brugsch, *Astronomische und astrologische Inschriften altaegyptischer Denkmäler*, p. 50. Leipzig, 1883.

[27] *Ibid.*

[28] Albîrûnî, *Chronology of Ancient Nations*, tr. Sachau, p. 75. London, 1879.

[29] S. Langdon, *Babylonian Menologies and the Semitic Calendar*, p. 76. London, 1935.

[30] Eusebii Pamphili, *Chronici Canones*, ed. Fotheringham, p. 221. Londini, 1923.

the Agathobuli. The very same Passover (full-moon) doctrine was proclaimed in the significant Greek of Philo in the time of Christ.[31] Presently it is acknowledged by the Christian church — John, Polycrates, Anatolius, Theophilus, Ambrose. In the language of astronomy, in the Reformation of 1582, the following is what Aristobulus taught:

> "Quum duo sint aequinoctia, veris & autumni, aequis spatiis dirempta: & 14. die mensis primi sit statua solemnitas *post vesperam*, quando Luna Soli opposita è regione deprehenditur, sicut etiam oculis probare licet: invenitur utique vernalis aequinoctii partem Sol obtinens; Luna verò è contrario, autumnalis."[32]

"On the 14th day of the first month *after the evening* when the moon is caught in the region opposite to the sun, the feast is fixed!" Clearly, then, this point of time was the end of the 13th, on which day the moon must have fulled. The Church received this passover-full-moon doctrine from Jewish interpretation of Pentateuchal law, adjusted her Easter cycles in harmony with this principle,[33] and henceforth contended that "never, according to the custom of the Church, was the paschal limit on the full moon."[34]

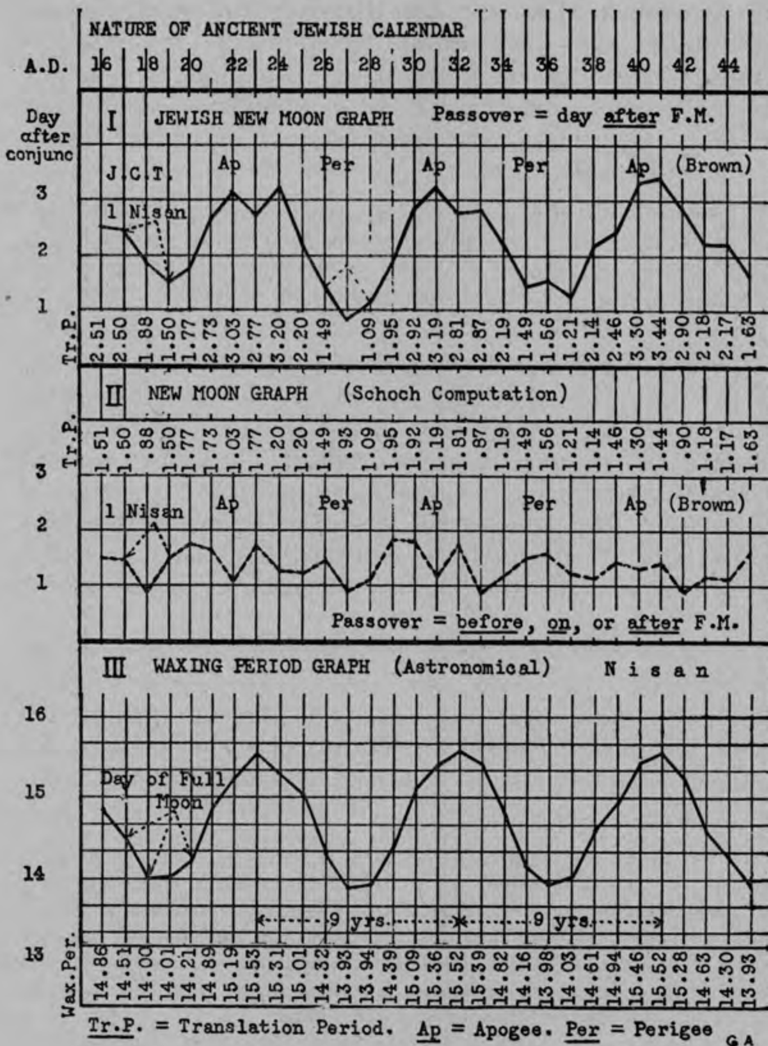
The accompanying table of graphs further demonstrates the difference between the reckoning of the Nisan new year in harmony with the ancient position of the passover *after* the full moon, and the new moon formula of Schoch, who places the passover *before*, *on*, and *after* the moon has filled her disk, as the case may be.

[31] The following excerpt from *Special Laws* II, 210 is similar to the one from Nancel: "*ἵνα μὴ μεθ' ἡμέραν μόνον ἀλλὰ καὶ νύκτωρ πλήρης ὁ κόσμος ᾖ τοῦ φύσει παγκάλου φωτός, ἡλίου καὶ σελήνης κατ' ἐκείνην τὴν ἡμέραν ἀλλήλοις ἐπανατελλόντων αὐγαῖς ἀδιαστάτοις ᾆς μεθόριον οὐ διακρίνει σκότος.*" The double prepositioned *ἐπ-ανατελλόντων* is significant — *ἐπί* obviously referring to the setting sun, and *ἀνά*, to the rising full moon on "that day," the paschal 14th. (*Sp. Laws* II, 149.)

[32] Nicolai Nancelii, *Analogia Microcosmi ad Macrocosmi*, Secunda Pars, col. 1204. Paris, 1611.

[33] J. G. Hagen, *Catholic Encyclopedia*, art. *Lilius*, IX, 251. New York, 1910. Joseph Scaliger, *Thesaurus Temporum Eusebii Pamphili, Canonum Isagogicorum*, Liber Tertius, p. 183. Amstelodami, 1558.

[34] Dionysius Petavius, *Animadversiones in Epiphanii Opus*, p. 195. Coloniae, 1682.



Description. In Graph I, each 1 Nisan date is found by placing 14 Nisan on the day after the Jewish date of full moon on the Jerusalem meridian, and from thence counting back to 1 Nisan. The translation period equals the difference in time between the local conjunction and the sunset beginning of the 1st of Nisan.

In Graph II, 1 Nisan is taken from *Babylonian Chronology*. Translation periods are computed the same as for Graph I.

In Graph III, the Nisan waxing periods are obtained by subtracting the corresponding new moon dates from those of the full moon.[35] The peak of each wave answers to the longest interval, and the valley, to the shortest. Graph III is not hypothetical, for it is based upon known figures.

Comments. It is not difficult to see that Graph I more nearly conforms to the known figures of the third graph than does Graph II. This relation is a reliable check upon the lunar theory involved, for the translation period is necessarily governed by astronomical factors which advance the moon east of the sun at the time of conjunction. The most consequential factor in the paschal period is the moon's perigee or apogee, for in the spring of the year the moon's latitude is not of so great importance, a fact which Schoch has clearly stated, along with Maimonides, Sidersky, Baneth, Ferguson, Fotheringham, Draper, and many others. The following is Schoch's argument:

"Besonders bemerkenswert ist, dass im Frühling das notwendige Alter viel mehr darauf an, dass der Mond sich möglichst schnell von der Sonne entfernt, um eine bestimmte Elongation zu erreichen . . . Dagegen ist im Frühling eine grosse positive Breite weniger wichtig, da dann die Ekliptik schon so steil am Abend gegen den Horizont aufsteigt, dass die positive Breite die Höhe des Mondes über dem Horizont nur wenig vermehrt."[36]

Consequently, if it were not for the moon's perturbations and other irregularities due to the shape of her orbit, lunar motion at Passover time would be a simple problem for the mechanic. With reference to Graph II, however, it is clear that Schoch's lunar theory almost wholly annulls any anomalistic relation between his dates and the moon's true motion. In very few years does his 1 Nisan outline mesh with the moon's actual course as portrayed in Graph III.

As to the question whether Schoch's tables correspond to lunar observation in Babylonia, I will give an interesting example of his table date being too early, as is frequently the case on the meridian of Jerusalem. Let us go back to the 37th year of Nebuchadnezzar II (–567/566), as reported by Neugebauer and Weidner.[37] The computed lunar eclipse was not seen in Babylon,

[35] Ginzel's *Chronologie*.

[36] Karl Schoch, "Christi Kreuzigang am 14 Nisan" (*Biblica* 9 [1928] 50).

[37] P. V. Neugebauer and E. F. Weidner, "Ein astronomischer Beobachtungstext aus dem 37. Jahre Nebuknezars II" (*Berichte über die Verhandlungen der Königl. Sächsischen Gesellschaft der Wissenschaften zu Leipzig Philologisch-historischer Klasse.* 67 [1915] 34).

but the recorded Nisan full moon date is sufficient for our purpose: "oder 12. [Nisan] ging Jupiter scheinbar akronychisch auf. Am 14. war der Gott mit dem Gotte sichtbar; 16^{m} vergingen zwischen Sonnenaufgang und Monduntergang am nächsten Morgen. Am 15. war es bewölkt."[38]

The small interval of only 16 minutes between sunrise and moonset "on the next morning" at once identifies this morning as the first after the full moon rose at sunset, or, namely, after *Gott mit dem Gotte sichtbar war.* If it had been the second morning after, then the interval would have been over an hour long. Hence we have the equation 13 Nisan = May 6 (Schram's *Nisan date for full moon*). Reckoning back to 1 Nisan we get —

13 Nisan = May 6	9 Nisan = May 2	5 Nisan = Apr 28
12 Nisan = May 5	8 Nisan = May 1	4 Nisan = Apr 27
11 Nisan = May 4	7 Nisan = Apr 30	3 Nisan = Apr 26
10 Nisan = May 3	6 Nisan = Apr 29	2 Nisan = Apr 25

Therefore 1 Nisan = April 24 (same as passover reckoning in this instance).

In *Babylonian Chronology,* Schoch's date is April 23.

4. *Paschal Routine in the Crucifixion Year*

Dr. Parker is not convinced that the ancient passover was sacrificed at the sunset beginning of 14 Nisan, and cites Dr. Feigin's discussion of this problem.[39] It is indeed to the merit of Jewish scholarship to try to discover harmony in NT chronology; and one can hardly refrain from questioning just how real the so-called controversy over the crucifixion calendar was, seeing that within fifty days after the resurrection, we find all the disciples keeping one and the same day for the feast of the omer (Acts 2 1; Lev 23 15–21).

However, the explanation of the passover routine in Dr. Feigin's argument is not too clear. The Friday evening supper is a common meal! And he wishes to correct Lk 22 7 to agree with an assumed "first day of the festival" in the companion texts (Mt 26 17 and Mk 14 12). But on what authority should

[38] *Ibid.*

[39] Samuel I. Feigin, "The Date of the Last Supper" (*Anglican Theological Review* (25 [1943] 212–17).

Hebrew translators, as Salkinson and Delitzsch, introduce the word חג into these texts when the corresponding Greek has no word for "feast," and speaks only of the "first of the unleavened bread" — a common expression for the Jewish 14th with practically all first century writers. Furthermore, why attempt to change Luke's account of an actual passover meal (22 15) to agree with an assumed common meal, after which, nevertheless, the Hallel was sung![40] This hymn was chanted on only one night in the year. If chronology has to base its conclusions upon scribal error, or upon an isolated textual criticism, then many similar arguments follow, and in the end few are convinced.

A most important feature with reference to the crucifixion problem is the calendar and the lunar theory by which it is to be established. Dr. Feigin's critical analysis has not changed the astronomical riddle, namely, to find a year with the Jewish 14th of Nisan coinciding with a sunset to sunset sixth day of the week, which, on this occasion, he has been accustomed to call the "eve of the passover." Without this calendar, no critical theory is of much aid to chronology. Allow me to restate the problem. Modern scholarship, more commonly than in earlier centuries, consents to a Jewish date of the crucifixion as 14 Nisan. All, however, do not acquiesce as to the hour of slaying the national paschal lamb, which, clearly, the death of Christ fulfilled. But, on calendaric grounds alone, what actual difference does it make whether the sacrifice was antemeridian or postmeridian? The calendar cannot tie to a particular hour of the oriental *nychthemeron*. It can only connect with the Jewish date as a whole!

If Dr. Feigin and his colleagues see the paschal lamb slain "late on Friday afternoon," the point of time is still admitted to be the 14th of Nisan, and this is the same Jewish date proposed in my *JBL* study. The calendarial problem, therefore, has not changed.

At least four different forms of lunar calendar have hitherto been presented as the answer to the crucifixion problem: (1) with the Passover *before* full moon (Greswell); (2) with passover *on* full moon (Edersheim); (3) with passover *before, on,* and *after*

[40] *Pesaḥim* X 5–7; Mt 26 30; Mk 14 26.

full moon (Schoch); and (4) with passover only *after* full moon — my thesis. The first puts the *Neulicht* before or on conjunction, when the moon could not possibly be seen; the second results in the *Neulicht* occurring either on the day of conjunction, or in any event, too near the sun; the third has its *Neulicht* dates commonly too early by one and even two days for the meridian of Jerusalem; and the fourth — I am defending, and will repeat again its postulates:

1. The passover occurred on 14 Nisan on the next day after the Jewish date of the full moon of barley harvest.
2. On the longitude and latitude of Jerusalem, the barley harvest moon regularly fulled on the Jewish 13th of Nisan.
3. The astronomical rhythm of the Nisan *Neulicht* is similar to that of the full moon — when the one is early or late in its period, so also is the other early or late in its period.
4. The calendar *Neulicht*, therefore, did not precede the conjunction, or occur on the day itself of conjunction on the meridian of Jerusalem.

All of Dr. Parker's criticisms are interesting. Some are of material importance because they reflect the opinion of other scholars. It is impossible in this limited paper to give consideration to other than the most essential of his arguments.